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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/887,907	06/22/2001	Charles Christian Birkner		7456

7590 12/20/2005

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EXAMINER	
STERRETT, JONATHAN G	

ART UNIT	PAPER NUMBER
3623	

DATE MAILED: 12/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/887,907	BIRKNER ET AL.	
	Examiner	Art Unit	
	Jonathan G. Sterrett	3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 October 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Summary

1. This **Final Office Action** is responsive to applicant's amendment filed October 16, 2005. Currently **Claims 1-22** are pending.

Response to Arguments

2. The applicant's arguments have been fully considered regarding **Claims 1-22**, but they are not persuasive.

The applicant argues that Norand fails to show the planning system tracks budgetary information and that Norand's system is not a planning system.

The examiner respectfully disagrees.

Norand's providing for tracking time and materials for construction fulfill the claim limitation because the activity of planning in construction includes for tracking time and materials. Tracking time and materials is a planning system function, because If time and materials consumption is higher than estimated, for example, then the planning system has to adjust for the future so that project being tracked does not run out of material.

The applicant argues that Norand fails to show a plurality of projects. The examiner respectfully disagrees.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "**a plurality of projects**") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

The claim limitations cited are "**a construction system to track material consumption and progress for each project**". Work schedules and the tracking of material consumption can be tracked by the system, including project information. The examiner interprets the reference to teach that project information is tracked for any and all projects, including each project.

The applicant argues that Coble fails to perform site engineering assessment including environmental concerns.

The examiner respectfully disagrees. Coble clearly lays out that the use of multimedia tools including handheld PDA's for automating the various tasks necessary for a construction supervisor. Coble gives explicit examples of the automation and types of checklists in Figure 4 and Figure 3. Figure 3 notes the importance of temperature control in a checklist for pouring concrete. This is an environmental concern in performing a site engineering assessment.

The applicant argues that Norand and Coble fail to disclose:

Pre-design planning and design management;

Pre-design planning and design management as a design system to perform site- engineering assessment that includes: Environmental site assessments;

Other site engineering assessments relating to Utility, Conflicts and Relocations;

Planning of Multi-project Coordination at the same work location;

Geotechnical Investigations;

Coordination Survey Activities;.

Real Estate and Right-of-Way Acquisitions;

Archeological Investigations;

Design Audits of Engineering Calculations;

Pre-design planning and design management as a design system to perform assembly of Construction Documentation including: Drawings, Cost Estimates, Project Specifications, Bid Package Documents and Bid Tabulation Evaluations;

Coordinate design conflicts and construction sequencing for new-project construction activities competing for the same equipment real estate, and resources.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "**Pre-design planning and design management;**

Pre-design planning and design management as a design system to perform site- engineering assessment that includes: Environmental site assessments;

Other site engineering assessments relating to Utility, Conflicts and Relocations;

Planning of Multi-project Coordination at the same work location;

Geotechnical Investigations;

Coordination Survey Activities;.

Real Estate and Right-of-Way Acquisitions;

Archeological Investigations;

Design Audits of Engineering Calculations;

Pre-design planning and design management as a design system to perform assembly of Construction Documentation including: Drawings, Cost Estimates, Project Specifications, Bid Package Documents and Bid Tabulation Evaluations;

Coordinate design conflicts and construction sequencing for new-project construction activities competing for the same equipment real estate, and resources.") are not recited in the rejected claim(s). Although the claims are

interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, both Norand and Coble are analogous art, because both address the use of wireless devices in the field to improve productivity. Norand provides a mobile platform that addresses most of independent claim 1's limitations although falls short of addressing a design system to perform site engineering assessment including environmental concerns. Coble teaches that the field of construction management engineering from the most top level hierarchy to the lowest construction worker (see Figure 1 and 2) can benefit from implementing automation tools in the field. Coble is explicit that construction foreman's productivity can be improved by automation of the various day-to-day tasks including checklists and repetitive forms (see page 3 paragraph 2 line 1-5). This clearly provides for the motivation to combine Norand and Coble with a reasonable expectation of success that productivity would be improved.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. **Claims 1-22** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Norand's Pen-Key handheld computer (Norand)** in view of **Coble.**

Coble, Dr. Richard J; Qu, Tan; Sun, Wei; "Multimedia Communications for Construction Foremen", 1998, AACE International Transactions, pp.1-5.

Norand's Pen-Key handheld computer is described in the following documents:

"Norand-Payback", February 6, 1998, Norand.com, pp.1-5, web.archive.org/web/19980206121604/www.norand.com/payback/pay_retn.html, hereafter referred to as **Reference U1**.

"Norand – Products", February 6, 1998, Norand.com, pp.1-2, web.archive.org/web/19980206114724/www.norand.com/6622.html, hereafter referred to as **Reference V1**.

"Norand – Payback", February 6, 1998, Norand.com, pp.1-2, web.archive.org/web/19980206121550/www.norand.com/payback/pay_intro.html, hereafter referred to as **Reference W1**.

Wood, Michael, "Fighting the paperwork nemesis", March 1996, American Gas v78n2, pp.32-33, hereafter referred to as **Reference X1**.

"Norand – Training", February 6, 1998, Norand.com, pp.1-2, web.archive.org/web/19980206120946/www.norand.com/sup_ti_descrip_MS.html, hereafter referred to as **Reference U2**.

"Powering better customer service. (Boston Edison implements mobile computing solution)(Company Operations)", May 1997, Communications News, v34, n5, p50, Dialog 02070908 19414033, hereafter referred to as **Reference V2**.

Regarding **Claim 1**, Norand teaches:

a handheld computer adapted to collect construction quality data from the field;

Reference X1 page 2 paragraph 3 line 1-3, Norand Pen*Key handheld computers are used in the field.

Reference X1 page 2 paragraph 3 line 9-10, inspection reports (i.e. construction quality data) from the field are collected by Norand system.

a planning system to track budgetary information;

Reference X1 page 3 paragraph 2 line 2-4, time and materials for construction contractors (i.e. budgetary information) is tracked by the Norand system.

a construction system to track material consumption and progress for each project,

Reference X1 page 2 paragraph 3 line 7-10, project information and time sheets for employees tracked by system.

the construction system adapted to receive quality data collected from the handheld computer,

Reference X1 page 2 paragraph 3 line 9-10, inspection reports (i.e. construction quality data) from the field are collected by Norand system –see line 3-4, this information is uploaded to the mainframe (i.e. construction system).

store daily project reports

Reference X1 page 2 paragraph 3 line 8-10, forms (i.e. reports) are used to store information that was previously hand written. These forms include daily time sheets and project information (i.e. daily project reports).

and generate key indicator reports

Reference U1 page 4 paragraph 11 line 1-3, reports collected from data entered into the system can be generated of any key indicators regarding worker performance.

Norand does not teach:

a design system to perform site engineering assessment;

Coble teaches:

a design system to perform site engineering assessment including environmental concerns;

Page 4 paragraph 1 line 5-7, handheld system incorporates computer aided design (CAD) drawings to record construction activities (i.e. site engineering assessment).

Page 4 paragraph 1 line 12-15, construction activities can be assessed and recorded using computer aided design (CAD) system.

Page 3 Figure 3, The pour check out sheet demo lists temperature control as a checklist input in the site engineering assessment of ensuring proper control during the pouring of concrete. Temperature control is an environmental concern to be addressed during the pouring of concrete, because the temperature of the surrounding environment (i.e. air temperature) impacts the curing strength of the concrete. It would be obvious to also include a broad range of other environmental concerns in site engineering assessment since it is old and well known in the art of construction management to include environmental concerns in the engineering and supervision of construction activities (see also page 3 paragraph 2 line 6, accident investigations would include inputting environmental concerns, since weather is known to be a factor in causing accidents).

Both Coble and Norand disclose providing wireless mobile computing capability to field workers, thus both Coble and Norand are analogous art.

Coble teaches that providing construction crews in the field with mobile wireless devices improves their productivity (Page 3 paragraph 2 line 1-2).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Norand, regarding providing field workers with mobile computers, with providing mobile workers with the capability of providing site engineering assessments, as taught by Coble, because it would improve the productivity of construction workers at the job sites.

Regarding **Claim 2**, Norand and Coble teach all the limitations of Claim 1 above, and Norand also teaches:

wherein the handheld computer collects work-in-progress data.

Reference X1 page 3 paragraph 2 line 4-5, work in progress data is collected by Norand's handheld computer.

Regarding **Claim 3**, Norand and Coble teach all the limitations of Claim 1 above, and Norand also teaches

wherein the handheld computer collects project and contract identification,

Reference X1 page 3 paragraph 2 line 4-5, contractor (i.e. contract identification) data is collected by Norand's handheld computer.

Reference X1 page 2 paragraph 3 line 9, contract information is collected by handheld computer.

inspector identification,

Reference X1 page 2 paragraph 3 line 9-10, inspection reports can be inputted into the Norand computer. An inspection report contains information about what was inspected, and also contains who was performing the inspection.

Norand does not teach:

wherein the handheld computer collects item number, location, and one or more description of activities.

Coble teaches:

wherein the handheld computer collects item number, location, and one or more description of activities

Page 3 Figure 3 – This form contains Unit No (i.e. item number) and description of activities (e.g. checklists for pouring concrete – formwork) as well as one description of activities "Pour Check Out Sheet" describing the pouring of concrete.

Page 4 paragraph 1 line 11-15, activities related to change notices are described – see also Figure 4.

Both Coble and Norand disclose providing wireless mobile computing capability to field workers, thus both Coble and Norand are analogous art.

Coble teaches that providing construction crews in the field with mobile wireless devices improves their productivity (Page 3 paragraph 2 line 1-2).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Norand, regarding providing field workers with mobile computers, with providing mobile workers with the ability of the handheld computer to collect item number, location, and one or more description of activities, as taught by Coble, because it would improve the productivity of construction workers at the job sites.

Regarding **Claim 4**, Norand and Coble teach all the limitations of Claim 1 above, and Norand also teaches:

wherein the handheld computer collects labor related information.

Reference X1 page 2 paragraph 3 line 8, daily time sheets (i.e. labor related information) are collected by Norand's handheld computer.

Regarding **Claim 5**, Norand and Coble teach all the limitations of Claim 1 above, and Norand also teaches:

wherein the handheld computer collects labor type, quantity and hours.

Reference U1 page 4 paragraph 9 line 1-8, Norand's computer records the driver time associated with a particular truck (i.e. labor type) and the number of hours a driver works.

Reference U1 page 4 paragraph 11 line 1-3, information on delivery information (i.e. quantity of goods delivered) is collected by the handheld computer.

Regarding **Claim 6**, Norand and Coble teach all the limitations of Claim 1 above, and Norand also teaches:

wherein the handheld computer collects equipment information.

Reference U1 page 4 paragraph 9 line 4-5, the driver enters their truck number (i.e. equipment information) into the handheld computer.

Regarding **Claim 7**, Norand and Coble teach all the limitations of Claim 1 above, and Norand also teaches:

wherein the handheld computer collects equipment type,

Reference U1 page 4 paragraph 9 line 4-5, the driver enters their truck number, (i.e. equipment type).

quantity,

Reference U1 page 3 paragraph 3 line 1-3 & paragraph 4 line 1-4, bill of lading document information is entered into the computer. The bill of lading contains quantity information.

hours in use,

Reference U1 page 2 paragraph 2 line 1-4, The hours in use of a truck is recorded, since the time stamp for each stop is recorded. Thus at the end of the day, the total time a truck was being driven as well as stop time is recorded.

and stand-by hours.

Reference U1 page 2 paragraph 2 line 3-4, standby time is recorded when a driver arrives or leaves or leaves at a stop. This time is recorded in hours and minutes for proof of delivery to a customer.

Regarding **Claim 8**, Norand and Coble teach all the limitations of Claim 1 above, and Norand also teaches:

wherein the handheld computer collects submittal information.

Reference X1 page 3 paragraph 1 line 4-5, submittal information is collected by the handheld computer and can be printed off to provide documentation that can be submitted to comply with regulations.

Regarding **Claim 9**, Norand and Coble teach all the limitations of Claim 1 above, and Norand also teaches:

wherein the handheld computer collects weather condition, comments, and an inspector name.

Reference X1 page 2 paragraph 3 line 9-10, inspection reports would include an inspector's name and comments.

Norand also teaches the completion of daily work forms on the computer where they had previous been done by hand.

Reference X2 page 2 paragraph 1 line 1-3, daily work forms were automated by the Norand wireless handheld system.

Norand does not teach:

wherein the handheld computer collects weather condition.

Coble teaches the use of handheld wireless computers to automate the entry of daily data by construction foremen, including adding comments about daily problems (Page 3 paragraph 7 line 3-4, short descriptions of daily construction-related problems entered).

Both Coble and Norand disclose providing wireless mobile computing capability to field workers, thus both Coble and Norand are analogous art.

Coble teaches that providing construction crews in the field with mobile wireless devices improves their productivity (Page 3 paragraph 2 line 1-2).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Norand, regarding providing field workers with mobile computers, with providing mobile workers with the ability of the handheld computer to collect short descriptions of daily construction related problems, as taught by Coble, because it would improve the productivity of construction workers at the job sites.

Norand and Coble do not teach where weather information is collected by the handheld computer.

Official Notice is taken that it is old and well known in the art for weather to have an impact on construction projects, including to cause delays due to weather-related problems. Weather delays are known to impact a construction schedule and are tracked so that progress against a deadline can take into weather delays and be more accurate in estimating the completion timing.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the collective teachings of Norand and Coble, regarding providing handheld computers that automate the entering and collection of daily report data, to include the step of entering weather data, because it would improve the scheduling process for construction projects by automatically tracking weather-related impacts on schedule.

Regarding **Claim 10**, Norand and Coble teach all the limitations of Claim 1 above, and Norand also teaches:

wherein the handheld computer hot-syncs collected information to a server.

Reference U2 page 2 paragraph 4 line 5, Norand uses a Nor*Ware 6920 Communications Server for communication with units in the field. This unit receives information from the handheld unit in the field.

Reference W1 page 1 paragraph 9 line 6-10, every time a driver enters information into his handheld computer, the information is hot-synced back to the wireless LAN.

Regarding **Claim 11**, Norand teaches all the limitations of Claim 10 above, and Norand also teaches:

wherein the collected information is hot-synced wirelessly using a wireless handheld unit.

Reference W1 page 1 paragraph 9 line 6-10, every time a driver enters information into his handheld computer, the information is hot-synced back to the wireless LAN.

Regarding **Claim 12**, Norand teaches all the limitations of Claim 10 above, and Norand also teaches:

a modem coupled to the handheld computer, wherein the information can be hot-synced using a modem.

Reference W1 page 1 paragraph 9 line 6-10, every time a driver enters information into his handheld computer, the information is hot-synced back to the wireless LAN.

Reference V1 page 1 paragraph 7 line 2, the Norand computer can use fax-modem cards.

Regarding **Claim 13**, Norand teaches all the limitations of Claim 10 above, and Norand also teaches:

a hot-sync cradle coupleable to the handheld computer, the cradle hot-syncing the collected information for transmission to a server.

Reference W1 page 2 paragraph 1 line 3-5, driver can put the handheld computer in a cradle in a truck for hot-syncing the collected information for transmission to a server.

Reference U2 page 2 paragraph 4 line 5, Norand uses a Nor*Ware 6920 Communications Server for communication with units in the field. This unit receives information from the handheld unit in the field.

Claims 14-22 recite similar limitations as those recited in **Claims 1-13** above, and are therefore rejected under the same rationale.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan G. Sterrett whose telephone number is 571-272-6881. The examiner can normally be reached on 8-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on 571-272-6729. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JGS

JGS 12-13-2005

Susanna Diaz

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